



**US Army Corps
of Engineers**

**DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS**

**INTERAGENCY AND INTERGOVERNMENTAL
SUPPORT PROGRAM**

**ANNUAL REPORT
FISCAL YEAR 1998**

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CONTENTS

<u>SECTION</u>	<u>PAGE</u>
I. INTRODUCTION.....	1
II. POLICIES AND PROCEDURES.....	2
III. PROGRAMS AND PROJECTS.....	3
A. FEDERAL DEPARTMENTS AND INDEPENDENT AGENCIES	
1. FEDERAL DEPARTMENTS	
Agriculture, Dept. of (USDA).....	3
Commerce, Dept. of (DOC)	4
Energy, Dept. of (DOE)	4
Health and Human Services, Dept. of (HHS)	7
Housing and Urban Development, Dept. of (HUD)	7
Interior, Dept. of (DOI).....	8
Justice, Dept. of (DOJ)	10
Transportation, Dept. of (DOT)	12
Treasury, Dept. of (DTR)	13
Veterans Affairs, Dept. of (VA)	13
2. INDEPENDENT FEDERAL AGENCIES	
American Battle Monuments Commission (ABMC)	14
Architect of the Capitol.....	14
Environmental Protection Agency (EPA)	14
Federal Emergency Management Agency (FEMA)	15
General Accounting Office (GAO)	16
General Services Administration (GSA)	16
Holocaust Memorial Council.....	16
John F. Kennedy Center for the Performing Arts.....	16
National Aeronautics and Space Administration (NASA)	16
National Science Foundation (NSF)	17
Nuclear Regulatory Commission (NRC)	17
Tennessee Valley Authority (TVA)	17
U.S. Information Agency (USIA)	17
B. STATE LOCAL TERRITORIAL AGENCIES AND TRIBAL GOVERNMENTS	
American Samoa.....	18
Arkansas Electric Cooperative Corporation.....	18
Cleveland, OH.....	18
Clinton County, NY.....	18
Commonwealth of Northern Mariana Islands.....	18
Compton, CA.....	18
District Of Columbia Public Schools.....	18
Florida.....	18

CONTENTS (cont.)

B. STATE LOCAL TERRITORIAL AGENCIES AND TRIBAL GOVERNMENTS

Garwood, NJ.....	18
Hawaii.....	18
Indian Nations.....	18
Kansas City, MO.....	18
Kauai, HI.....	19
Long Beach, CA.....	19
Los Angeles, CA.....	19
Massachusetts.....	19
Memphis, TN.....	19
Minnesota.....	19
Montana.....	19
Montana State University.....	19
Nevada.....	19
New Hampshire.....	19
New Jersey Institute Of Technology.....	19
New Mexico.....	19
New Orleans Port Authority.....	19
North Dakota State University.....	20
Oregon.....	20
Oregon State University.....	20
Puerto Rico.....	20
Rhode Island.....	20
Richmond, ME.....	20
Roosevelt Island, NY.....	20
San Miguel County, CO.....	20
Seattle, WA.....	20
South Carolina Ports Authority.....	20
University of Alaska.....	20
University of California, Santa Barbara.....	20
University of Maryland.....	21
University of New Hampshire.....	21
University of New Mexico.....	21
University of New Orleans.....	21
University of Washington.....	21
Vermont.....	21
Village of Champlain, New York.....	21
Wisconsin.....	21
 C. PRIVATE FIRMS/ORGANIZATIONS.....	 22
 D. FOREIGN NATIONS AND INTERNATIONAL ORGANIZATIONS.....	 23
 IV. TABLE A - FY 98 IIS PROGRAM - WORKLOAD SUMMARY.....	 24
 V. TABLE B - FY 99 IIS PROGRAM - PROJECTED WORKLOAD SUMMARY.....	 25
 VI. APPENDICES	
A.USACE LABORATORIES ASSISTANCE TO PRIVATE FIRMS AND ORGANIZATIONS.....	A-1
B. ACRONYMS.....	B-1

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I. INTRODUCTION

This report summarizes the Interagency and Intergovernmental Support (IIS) program, executed by the Department of the Army, Corps of Engineers (USACE), providing assistance to non-Department of Defense (DOD) agencies and organizations. The report includes: a background summary of the USACE Support for Others (SFO) program; an explanation of policies and procedures that guide the program; a brief description of program activities and summary tables of the Fiscal Year (FY) 98 actual and FY 99 projected programs workload.

The work USACE performed under the IIS program is listed under each customer with a short description. This report summarizes approximately \$695 million of reimbursable support accomplished in FY 98 and an estimated \$772 million of reimbursable support projected to be accomplished in FY 99.

Most USACE customers are Federal agencies who account for over 95 percent of the total program funding. USACE customers include state, local, territorial, tribal and foreign governments; international organizations; and U.S. firms. For Federal agencies, other governments and international organizations, USACE performs inherently governmental functions, such as program management, engineering, environmental programs and construction management, real estate support, research and development and other related services, while serving as extensions of their staff. For U.S. firms overseas, USACE provides unique technical capabilities, not readily available from the private sector, which are globally recognized and assist in making U.S. firms' proposals more competitive. Additionally, USACE may work for or cooperate with the U.S. private sector in the development and application of new technology.

As government agencies downsize and reduce their engineering capability, USACE is able to offer these agencies use of USACE management and technical expertise to assist them in accomplishing the engineering, environmental restoration and construction aspects of their mission through the IIS program. This ensures responsible Federal oversight on agency programs and projects. The customers that USACE support provide full funding for these efforts, and retain control of their program(s). USACE accomplishes the work for other agencies within the terms of a mutually agreed upon scope of work. USACE ensures quality and timely execution within an established budget.

Supporting others enables USACE to maintain and enhance its technical expertise and management capabilities. The diversity of work allows USACE to apply their project

management skills and engineering, design and construction expertise in new and innovative ways. This opportunity also serves to expand USACE's skill base, thus strengthening their ability to carry out their traditional civil works and military missions and roles.

USACE places high value on satisfying customers, especially since all of their IIS customers must decide how they will accomplish their mission and who, if anyone will assist them. The USACE approach is to understand their customer, perform the work in a highly competent and professional manner and to keep the customer informed about the status of their work as it progresses and involved in key decision-making.

The Office of Management and Budget (OMB) recognizes the value performed by USACE under the IIS program. OMB supports the IIS program by providing additional manpower resources specifically for this mission. The Administration considers the IIS program an example of a business-like practice and supports it in the National Performance Review with the recommendation to "maximize the use of USACE programming, planning, engineering and contract management capabilities in support of other Federal agency programs".

II. POLICIES AND PROCEDURES

A. USACE's goal is to apply their capabilities to assist others in the successful execution of their mission, not to take away their work. Many agencies do not have staff to effectively manage environmental, engineering or construction work performed under contract by private firms nor do they have the technical expertise necessary to fulfill the in-house engineering needs of their mission. USACE is available to support these agencies, as and when requested.

B. USACE will not commit to support a customer without making certain that adequate resources and technical skills are available to ensure absolute customer satisfaction.

C. USACE negotiates agreement with the customer before starting work. These agreements include a scope of work and identification of roles and responsibilities. The customer's needs are the main focus when developing and tailoring the agreements.

D. The USACE objective is to manage the IIS program in partnership, not in competition, with the private sector. USACE relies heavily on the talents of private firms to execute the IIS mission. USACE serves as an extension of the agency's staff providing Federal presence and government oversight to protect the taxpayers' interests. This capability can relieve the agency of the burden of hiring and training specialists to perform these functions. In this respect, USACE offers proven Federal contract management and technical experience to assist other agencies in the execution of their missions.

III. PROGRAMS AND PROJECTS

A. FEDERAL DEPARTMENTS AND INDEPENDENT AGENCIES

1. FEDERAL DEPARTMENTS

DEPARTMENT OF AGRICULTURE (DOA)

DOA – *General*

CERL tested and evaluated the Ecological Dynamics Simulation model in FY98 for predicting impacts of controlling juniper trees on water quality/yield at Fort Hood.

DOA - *Commodity Credit Corporation (CCC)*

In FY 98, NWO initiated the construction of two potable water supply wells, pumping appurtenances and piping connection to the Village of Hordville, NE water supply system. The system is expected to be fully constructed and operational by the end of FY99.

DOA - *Farm Services Agency (FSA)*

USACE districts perform investigation and remedial actions for FSA. These efforts include preliminary assessment screening; tank removals; contaminated soil removal; removal/disposal of hazardous waste and debris; building demolition; lead based paint surveys; asbestos surveys and remediation; completion and submission of Independent Remedial Action Reports to state regulators; and maintenance, completion and submission of annual dangerous waste reports to state regulators on behalf of FSA. In FY98, NWP completed bio remediation on their final site. NWK completed several inventory farm cleanup projects for FSA in Missouri. MVP is providing design and construction services for remediating contaminated farm sites in Minnesota and Wisconsin. NWS performed investigation and clean-up actions at 6 farm sites in Washington.

DOA - *Forest Service (USFS)*

CREL conducted investigations for USFS in FY98 on bituminous surface treatments, recycling methods, seasonal variations in soil moisture and temperature and their effects on roads and slope stability. In FY99, CREL will assess the effectiveness of chunkwood as a pavement-insulating layer to reduce frost penetration. MVS performed photogrammetric mapping at the Midewin National Tallgrass Prairie. NWS designed the repair of flood-damaged campgrounds, boat ramps and shorelines on the Colville National Forest. The construction for the repairs is scheduled for award and execution in FY99. NWP performed annual inspections and evaluation of the natural debris dams and outlet channels at Castle and Coldwater Lakes, and tunnel inspection at Spirit Lake (post Mount St. Helens eruption). During FY98, repairs on the Spirit Lake Tunnel were completed in September. In FY99, NWP will prepare a cost estimate for slope protection alternatives of the deteriorating rock slopes in the intake area of the Spirit Lake Tunnel and routine monitoring of Spirit Lake Tunnel and Castle Lake.

DOA - *Natural Resources Conservation Service (NRCS)*

CREL designed, constructed, and tested an electronic snow load sensor for the NRCS. MVR is providing mapping for small dam sites to NRCS. MVK provided engineering services in support

of the Bayou Grosse Tete Watershed Remedial Work during FY98. In FY99 POH will conduct a study to alleviate the flooding problem on non-Department of Defense property in vicinity of Lualualei, Oahu, Hawaii for the NCRS. SWL provided general architectural services to NCRS in FY98.

DOA - *Melaleuca Quarantine Facility*

In FY98 SAJ updated the specifications for this high-tech research and development facility to current building codes.

DOA - *Rural Development - Rural Utility Services (RUS)*

SAJ reviews the proposed specifications and contract documents for public utility facilities designed by consulting engineers for RUS applicants. SAJ reviewed 45 projects during FY98. SWL provided general architectural services for the Rural Development in FY98.

DEPARTMENT OF COMMERCE (DOC)

DOC - *Economic Development Administration (EDA)*

The LRB provided support to EDA for remedial design/remedial action efforts in Brainard, MN, Wisconsin Steel, IL and J&J Castings in MN.

DOC - *National Weather Service*

In FY98, CREL assisted the National Weather Service Automated Surface Observing System Program Office with the development and evaluation of ice buildup. CREL also collected information on historic ice events in the Susquehanna Basin.

DOC - *National Oceanic and Atmospheric Administration (NOAA)*

MVS updated nautical charts and maps in FY98. NWS completed seismic screening of more than 70 NOAA buildings to determine which buildings required further analysis and preparation of an estimate for an in-depth analysis. In-depth analysis of required buildings will be conducted in FY99. NWK performed a facilities design review for a new fisheries lab planned for Charleston, SC. POA will design and oversee construction of four housing units at Yakutat, AK. Construction is planned for FY99. POA also supports the Integrated Program Office by performing design reviews, construction quality assurance and environmental support of the Polar Satellite Convergence Program effort at Fairbanks, AK. POH removed an underground storage tank and installed an above ground storage tank at the NOAA Observatory in American Samoa.

DEPARTMENT OF ENERGY (DOE)

DOE - *General*

CERL provided energy technology expertise for the Wedge 1 Design Review and for the federal energy showcase and greening plan and completed the heating ventilation and air conditioning module in the Energy Trainer for energy managers. CERL assisted DOE in building an upgraded Building Energy Simulation Computer System. LRH provided technical assistance and HTRW support including risk evaluation, wetlands delineation and real estate assistance,

including land acquisition and title review to DOE in FY98 and FY99. NWW assisted NWS on Hanford projects including review of cost estimates and contractor cost estimating performance. NWS supported DOE through the Innovative Technology Exchange Program. It is anticipated that additional technical and construction management oversight as well as project management, information management, and cost engineering support will be provided to various DOE sites during FY99. By combining mobilizations with FUDS work on the island and support to the Navy, DOE saved mobilization costs to this remote location on the Aleutian Chain. SPA has supported DOE with real estate acquisition and leasing of lands. SWT provided technical support to the Interstate Technology Regulatory Cooperation group in FY98.

DOE –Bonneville Power Administration (BPA)

NWS continued the 2406 Program with electrical system testing at Albeni Falls, ID, Libby, MT, and Chief Joseph, WA Dams.

DOE – Federal Energy Technology Center (FETC)

In June 1995, two interagency agreements were executed with FETC and the acting ASA(CW). The first agreement allows the USACE to provide support to FETC through the year 1999. The second agreement allows FETC to assist the Army in the assessment of advanced hazardous waste characterization and remediation technologies. LRH serves as the Army's point-of-contact for these agreements with FETC. USACE is providing support to FETC work in four areas:

- *Environmental Remediation.* NWO is providing environmental characterization and remediation services to FETC at inactive waste sites at Hoe Creek, WY and Rock Springs, WY. Also, NAB has been providing environmental characterization and remediation services at the FETC facilities in Morgantown, WV.
- *NEPA Support.* USACE is providing NEPA support for FETC's Fossil Energy sites by preparing documents including Categorical Exclusions, Environmental Assessments and Environmental Impact Statements for projects across the DOE complex.
- *Decontamination and Decommissioning.* FETC has the lead for the Decontamination and Decommissioning of DOE's nuclear weapons complex. DOE has 12 sites across the U.S., which require various forms of remedial work prior to being deactivated. FETC's mission is to develop and demonstrate improved technologies to decontaminate, dismantle and deactivate these facilities. DOE has 7,000 contaminated buildings across its weapons complex that require deactivation, 700 of which require decommissioning, and over 550,000 metric tons of metal and 23 million cubic yards of concrete and 180,000 metric tons of metal currently in contaminated buildings that require disposition. FETC's strategy to solve these problems is to solicit demonstration proposals from its field offices and focus on large-scale demonstrations and develop technologies to cost-effectively dismantle and surplus these facilities and their contents. NWW is supporting FETC's Large Scale Demonstration program by estimating the cost of Decontamination and Decommissioning using innovative technology. NWW is providing cost engineering support to three decontamination and decommissioning demonstrations: Chicago Pile 5 Test Reactor at Argonne National Lab, C-Reactor at Hanford, and Fuel Storage Canal at the Idaho National Environmental and Engineering Lab.
- *Project Management and Life Cycle Cost Analysis.* FETC also relies on USACE for project management support and for conducting life cycle cost analyses of baseline and innovative technologies for comparison purposes.

In FY 98, NWO continued the remediation and characterization of the Hoe Creek and Rock Springs, WY sites for FETC. In FY99, NWO will continue a Long Term Monitoring program at each site. Five different DOE Operations offices shipped and disposed of waste using NWO's NORM contract in FY98: Chicago Operations Office, Ohio Operations Office, Kirtland Area Office, Oakland Operations Office, and Oak Ridge Operations Office. NWW is evaluating and recommending alternative solutions to temporarily stabilize the east bank of Locke Island (a large island in the Columbia River that is listed in the National Register of Historic Places).

DOE - Project Environmental Management (EM)/Ten year Plans (TYPs)

USACE conducted independent assessments proposed costs for cleaning contaminated sites under the DOE Office of Environmental Management (EM), including supporting cost estimates, schedules, and technical scopes at 13 DOE-EM sites. The effort included identification of potential savings and program acceleration. NWW provided the program management, field team leadership, coordination, and oversight on this effort. The Project EM task was completed in June 1998, and identified \$2.0 B in potential benefits with a benefit to cost ratio of approximately 350 to 1.

DOE - Idaho National Engineering and Environmental Laboratory (INEEL)

The INEEL requested NWW to conduct review of INEEL effort to comply with a settlement agreement (SA) between the State of Idaho, the Department of Energy, and the Department of the Navy. This agreement outlines requirements for future operations at INEEL. The task involved a comprehensive review of INEEL planning and estimated costs for SA compliance and an assessment of validation readiness for each of the projects reviewed. This task was completed in September 1998. INEEL has requested additional cost engineering support from NWW for FY99. In FY98, NWS supported DOE at INEEL with real estate services.

DOE - Hanford, Cost Support

NWW performed Activity-Based Cost evaluation of the Hanford Facility Stabilization Transition Project Management Account. Work included a critical assessment, ABC estimate of the current baseline, cost analysis, and a report to document the findings. Savings in the amount of \$1.3M were identified on this project. NWW also performed cost estimating reviews of Hanford Contractors for DOE. The first task was to perform an assessment of the Project Hanford Management Contract contractors to determine whether estimating practices and procedures were consistent with the contract requirements. This review included a detailed cost engineering assessment of the prime contractor, Fluor-Daniel Hanford, and six major subcontractors. This assessment produced a formal report that will be used as a tool to guide future changes in cost estimating at Hanford. The second task was to perform a detailed assessment of Fluor Daniel Northwest, the company that prepares many cost estimates for the site. This review will result in a guide to evaluate and recommend changes in Fluor Daniel Northwest's estimating practices.

DOE - Lawrence Livermore Laboratory

WES is verifying the Parflow model (a three dimensional remediation groundwater model developed by DOE) and developing an interface with the DOD Groundwater Modeling System for incorporation into that system.

DOE - Pantex Plant

SWT is providing environmental and infrastructure support to Pantex.

DOE - Sandia National Laboratory

In FY98, CREL confirmed RDX concentrations and identified and quantified RDX metabolites in soil samples sent from INEEL.

DOE - Superconducting Super Collider (SSC)

SWF has completed construction and is in the interim maintenance stage of mitigation of sites.

DOE - W.R. GRACE

NAB is preparing for remediation of Building 23 and the Radioactive Waste Disposal Area.

DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS)**HHS - Food and Drug Administration (FDA)**

NWK is the Program Manager for a national laboratory decommissioning program for the FDA Safety Office out of Rockville, Maryland. NWK coordinates the required support from each local geographic USACE district. In FY98, Environmental Site Assessments (ESAs) for the next four laboratory facilities in the program were initiated, bringing the total number of facilities to eleven which FDA has tasked USACE to assess and clean up. In addition, NWK, LRC and MVN coordinated to develop budget and schedule proposal for the design and cleanup of the FDA facilities in Chicago and New Orleans. SPL performed cultural resource planning and real estate services for the future construction of the regional laboratory in Irvine, CA.

HHS - Indian Health Service (IHS)

POA performed tank removals, site investigations, risk assessments, and remediations at four sites (Anchorage Native Hospital, Bethel, Kakanak, and Tanana) for IHS. In FY98, SWT assisted the Administration for Native Americans (ANA) by providing concept designs for the Cherokee Nation's Industrial Park and Port Development to be constructed on Cherokee trust land in Eastern Oklahoma.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD)

USACE supports HUD under their Modernization and Development (M&D) Programs. USACE performs physical inspections, contract administration reviews, drawing and specification reviews and final inspections of HUD renovation grants to local Public Housing Authorities..

DEPARTMENT OF INTERIOR (DOI)**DOI – General Support**

CERL updated *The Environmental Assessment and Management (TEAM) Guide* for DOI and started the program development for environmental compliance at DOI. MVP managed the demolition of an abandoned sewer plant on property occupied by the defunct Bureau of Mines.

DOI - Bureau of Indian Affairs (BIA)

SPA performed three environmental assessments for public roads within the Navajo Nation in Arizona and New Mexico. SPA is also providing construction quality assurance on a bridge construction project near Pemez Pueblo, NM. SPK is providing assistance to Laytonville Rancheria in Northern CA. In FY98, MVS completed the fieldwork and draft report for Phase 2 of an archaeological collections assessment project for BIA. These activities involved evaluating collections generated from investigations on Indian reservations in North and South Dakota and Nebraska. SWT and NWK collaborated in UST removals at Haskell Indian University in Lawrence, KS. The project involves the closure of 17 underground petroleum storage tanks and installation of a new above ground system.

DOI -Bureau of Land Management (BLM)

In FY98 MVS completed an archaeological collections management project. FY99 activities will include the creation of archaeological collections management informational tools and the continuation of physical inventories at selected repositories. NWS completed construction of a temporary repository on BLM land in FY98 and initiated construction oversight to haul mine tailings from the temporary repository to the Bunker Hill Central Impoundment Area in late FY98. In FY98, NWO supported the Montana State Office of BLM with their program for reclamation of abandoned mines. The design of the Lower Indian Creek was completed. The construction of the reclamation of the Lower Indian Creek will be completed in FY99. The design for High Ore Creek was awarded and will be completed by mid FY99. Work on three other sites (Wallace Creek, Redwing Waldy and Rochester) will begin in FY99. NWK removed metals contaminated soils at the BLM Rolla Research Center in Rolla, MO. In FY98 NWP provided training to obtain and log drill cores, core analysis, instrumentation analyses and site investigations. In FY99 USACE will review remaining sites, identify pertinent geotechnical aspects and provide repair alternatives for each site, and continue instrument readings to verify road stability.

DOI -Bureau of Reclamation (BOR)

CREL prepared an analysis of the ice jam flooding situation on the South Fork Shoshone River upstream of Buffalo Bill Reservoir near Cody, Wyoming. MVS performed photogrammetric mapping consisting of digitized photos for a database of agricultural vegetation of cropped lands. NWK performed low level radioactive waste remediation. NWP and NWD are providing data analysis for the calculation of project flood control and navigation benefits at Grand Coulee project.

DOI - National Park Service (NPS)

CERL collaborated with NPS in the modeling simulations of archeological features. CREL assisted NPS with updating floristic database for use in a potential GIS system and initiated research of the impact of all-terrain vehicles on Alaskan environment. MVP provided support to the NPS Mississippi National River and Recreation Area. In FY98, MVP provided research support and prepared a historical resources study of the Mississippi River corridor adjacent to Minneapolis and St. Paul. MVS performed photogrammetric mapping of selected areas of Indiana Dunes National Park. MVK provided geotechnical evaluation and development of alternatives for bluff repair and stream-bank protection for Mint Springs in Vicksburg. MVN

provided design, contracting and construction oversight of shoreline protection along Lake Salvador, LA. NAB is providing construction management support for several Chesapeake and Ohio Canal flood repair projects as well as project support to dredge the Washington Sailing Marina and the Columbia Island Marina. NWS performed a variety of environmental services for the NPS at 5 locations throughout Washington and Oregon. The work included UST removal/replacements; AST installations; contaminated soils removal/disposal; tank tightness testing; and construction of a fuel barge. POH is providing construction inspection assistance to NPS during the construction of a maintenance facility and parking lot at the US Arizona Memorial site. Construction will be completed in early FY99. NAN accomplished design and construction for coastal replenishment at Sandy Hook, NJ. NAE initiated design for the relocation of Nauset Light in Chatham, MA.

DOI –NPS *El Morro Restoration.*

SAJ completed restoration work on the El Morro Fortress, San Juan, Puerto Rico. Demolition of Ammo Bunker at El Morro is scheduled for FY99.

DOI – NPS *Everglades National Park (ENP)*

SAJ supports NPS at the ENP on modified water deliveries. The plan of improvements consists of structural modifications and additions to the existing project required to enable water deliveries for the restoration of natural hydrologic conditions in the Park.

DOI – *Office of Insular Affairs (OIA)*

OIA has asked POH to manage a program to improve public works operations and maintenance (O&M) of infrastructure in the Federated States of Micronesia, Republic of the Marshall Islands, Republic of Palau, American Samoa, Guam, Commonwealth of the Northern Mariana Islands (CNMI), and the U.S. Virgin Islands. Long-term institutionalized improvements developed in partnership with each host government is the focus of the program. Technical, managerial, and philosophical education for technicians, managers, executives, and the public are key ingredients to improved O&M. POH is providing technical assistance in support of the OIA Capital Improvement Project grants program administration function. In FY98, the service included assessing and reviewing the design for two runway repairs, FSM and prepare a Capital Improvement Project Plan for the CNMI government. Under the terms of the Compact of Free Association, POH, acting as the engineering agent for the OIA, has designed and is managing the construction of a 53 miles road system on Babeldaob Island, Republic of Palau. The project budget is \$149M. POH is also assisting CNMI in developing a functional assessment and suitable wetland process in Saipan.

DOI – *U.S. Fish and Wildlife Service (USFWS)*

CERL assisted the USFWS in developing state manuals and protocols for 5 states and 23 updates for environmental compliance assessments and management. LRE supported the USFWS (in cooperation with the Michigan Department of Environmental Quality and the Saginaw Chippewa Tribe) by preparing plans and specifications for dredging in the Saginaw Bay. Dredging was completed in FY98. LRH is constructing bank protection for Bat/Grape and Manchester Islands within the Ohio River. In FY98 MVP completed designs and initiated construction for flood damage habitat restoration on the Mississippi River for the Region 3 office of the USFWS. NWO continued technical support on the Metals Operable Unit and on other operable units at the

Crab Orchard National Wildlife Refuge located in Marion, Illinois. In FY99, NWO will continue follow-on support at Crab Orchard and expect the support to be completed in FY99. NWO continued hazardous waste removal actions at the Great Swamp National Wildlife Refuge in New Jersey (partnered with NAN). NWO utilized their Rapid Response contract at the Great Swamp Refuge to perform this work. In FY98, WES completed a project for the USFWS to map wetlands on U.S. Navy (Marine Corps) installations in coastal North Carolina. Field work was conducted at five sites to classify and delineate the wetlands on the Navy installations. A National Wetlands Inventory Data Field Data Sheet was produced for each site along with color and digitized map products.

DOI – *US Geological Survey (USGS)*

MVS performed photogrammetric mapping and completed floodplain mapping for designated portions of the Mississippi River floodplain. Photogrammetric mapping used Airborne Global Positioning System for real time navigation of aircraft. In FY98 NWP and the USGS entered into an agreement for the USACE to assist the USGS with the Southwest Washington Coastal Erosion Study. NWP agreed to perform underwater surveys, compile existing data for estimating sedimentation of the Lower Columbia River, and provide recommendations for future sedimentation studies for select Columbia River dams. In FY99, additional work items will be development of “optimal” tidal corrector for newly acquired underwater survey data, conduct reservoir sedimentation study according to study plan recommendations, and the acquisition of additional survey data.

DEPARTMENT OF JUSTICE (DOJ)

DOJ - *Bureau of Prisons (BOP)*

LRH is a regional POC for BOP Mid-Atlantic Region and brokered work to other USACE districts. SPL continued to support BOP with infrastructure repairs and modernization at Lompoc, CA, LA Metropolitan Detention Center, San Diego, Nellis, Phoenix, Boron, Dublin and Terminal Island. SPA is continuing asbestos abatement at the La Tuna, NM facility. SWF provided environmental and infrastructure engineering and construction support to the South Central Regional Office in Dallas, TX and its associated correctional institutions. SWF will continue to be the regional POC for the BOP Central Region. In FY98, SWF performed asbestos and lead based paint remediation at BOP facilities and the final design for a storm water drainage system. SWT provided contract administration and oversight support for asbestos abatement and UST removal contracts at the El Reno Federal Prison, Oklahoma.

DOJ – *Drug Enforcement Administration (DEA)*

Under a 1992 MOA and a new MOA signed during FY98, USACE provides engineering, design, and construction supervision services to the DEA with SWF as the USACE program manager. SWF awarded a contract for the construction of the El Paso Intelligence Center at Fort Bliss, TX in FY98. DEA provided \$6.05M for this effort. Work continued on three small tasks for the Aviation Operation Center at Alliance Airport in Fort Worth. Construction is underway for a hazardous material storage building and the construction of a firing range. SWF continues to manage design efforts for DEA Laboratory Facilities at various locations. GSA advertises and awards the contracts. The geographic districts perform construction supervision and inspection. Construction for the Mid-Atlantic facility is scheduled to begin in FY99. SPN will serve as an

on-site representative for a build-to-lease lab facility with a private developer and is currently assisting with review of the construction management plan.

DOJ - Federal Bureau of Investigation (FBI)

NWS completed construction of a building and site renovation of the Portland FBI Training and Firing Range Facility.

DOJ - Immigration and Naturalization Service (INS)

SWF serves as the single POC for INS, while tank removal or replacement services and other facility projects are performed by the geographic USACE district. USACE provides master planning services for various Border Patrol Sectors. Construction management continued on the Del Rio Border Patrol Station. SWF completed the designs and awarded construction contracts for a Sector Headquarters facility in Del Rio and a Border Patrol Station in Laredo. SWG supported design and construction of dormitories and performed design and repair and alteration work for miscellaneous buildings on Port Isabel. SWG is also conducting a master plan for Port Isabel. SWG has 3 Border Patrol Stations under design with construction awards scheduled in FY 99. LRB provided infrastructure repair and modernization support. NWS performed asbestos, radon, and lead-based paint surveys and design of remediation at two Montana sites. NWS constructed a garage and initiated building renovation at the end of FY98 in Bellingham, WA. POH will provide inspection services and serve as technical consultant to INS during the electrical renovation of the Honolulu INS Building., SAJ performed construction management and completed a \$2M site preparation project at the Krome (Miami, FL) detention Center. SPL is constructing a high-tech Pre-inspected Automobile Lane (PAL) and related facilities along the checkpoint, I-5, San Clemente, CA. SPL is currently completing work on several fueling facilities in Southern California and Arizona for the Border Patrol. SPL is also involved in the design of a new Border Patrol Station (400 agents) in Douglas, AZ as well as site selection for a new Border Patrol Station in Campo. SPL is also designing and constructing numerous facilities in Yuma Border Patrol Station. SPA is involved in designs for the INS Florence, AZ facility and real estate acquisition for the multi-tier border fence. In FY97, INS selected USACE to serve as their A-E Resource Center (INS-AERC), and serves as INS's gateway to USACE, providing INS a single point of contact for their program management. AERC received approximately \$48 million from INS. Projects included economic analyses of alternatives, environmental assessments, planning, design, construction, construction supervision, real estate acquisitions, real property surveys, materiel purchases, and contracting.

DOJ - U.S. Marshall's Service

LRB provided lead paint analysis for two structures in the Syracuse, NY area. SWT provided technical services to U.S. Marshall's Service for property assessments of seized properties. No work is projected for FY99.

DEPARTMENT OF TRANSPORTATION (DOT)

DOT – Office of the Inspector General

USACE entered into an agreement with the Office of the Inspector General in FY98 to assist DOT in the evaluation of work being accomplished by or with funds from any of the DOT operating administrations. Under this agreement MVR performed bridge inspections at two sites.

DOT – Federal Aviation Administration (FAA)

CREL provided assistance to FAA in environmental testing of cellular cement aircraft arresting system, performed material characterization test on airport pavement subgrade soils to assess the sensitivity of soils relative to moisture content. MVP installed battery and propane power backup systems at FAA sites and removed USTs. MVM built an access road to the FAA facility at Dyersburg, TN and performed work on the Memphis control tower, installed generators, and refurbished the Hinch Mountain access road. NWS performed waste characterization, removal and disposal of hazardous waste at FAA sites throughout Washington and Oregon; completion of Environmental Compliance Assessments (ECAP)/Occupational Safety and Health Compliance Assessments (OSHCAP) for FAA facilities in Montana and Colorado; and field work for ECAP/OSHCAP assessments at more than 500 FAA facilities in Colorado and Montana. NWK is preparing fire protection and spill control plans for selected facilities. NWS performed a historical building evaluation in Alaska in FY98. POA completed the site work at the last in a series of FAA housing projects and supported the FAA environmental program in Alaska with included tank removals and replacements, PCB abatements, asbestos abatements, building removals, landfill closures, wetlands mapping, environmental assessments, historical documentation. SPL managed road construction at five sites throughout Southern California. Both SPL and SPK performed UST removal, replacement with AST, and miscellaneous HTRW cleanup. Additionally, environmental and occupational safety and health compliance assessments were performed at a number of locations in California and Arizona. SPA has performed Environmental Assessments (EA), Environmental Due Diligence Audits, and Environmental Impact Studies (EIS). SWT provided technical services to the FAA for an archeological survey, an endangered species survey and a wetlands inventory at the Mike Monroney Aeronautical Center in Oklahoma City, Oklahoma. WES identified the factors affecting the shearing of surface materials of unsurfaced runways, identified operational capabilities of unsurfaced sites, identified products and techniques for controlling dust signatures and the factors affecting damage by foreign objects to the aircraft's engines. WES is determining the seismic vulnerability of all FAA structures.

DOT – Federal Highway Administration (FHWA)

CERL collaborated with FHWA in developing a sidewalk engineered maintenance management system (WALKER). CREL accomplished a study of the behavior of porous highway pavement materials under conditions of freezing and thawing and initiated a pavement sub-grade performance study. WES is conducting a study for FHWA to research the workability characteristics of Portland Cement concrete. In another study for the FHWA, WES is researching the potential of composite piles for use in highway and related facilities substructures.

DOT - Federal Railroad Administration (FRA)

CERL collaborated with the FRA in the area of railroad applications of recycled plastics research. NAN is assisting FRA and the Pennsylvania Station Redevelopment Corporation in the retrieval of artifacts from the original Pennsylvania Station for incorporation into the new facility.

DOT - Maritime Administration (MARAD)

In FY98 SPN completed a report on potential channel deepening project. SPN will be administering the design and construction of a channel deepening project and flood control

project for the Suisun Bay Reserve Fleet. The reconnaissance level workshop was also completed in FY98.

DOT - *US Coast Guard (USCG)*

LRE provides coastal engineering support to USCG. MVM provided mooring for tender and buoy barge in FY98. NWS performed work in FY98 in support of sediment sampling and disposal evaluation near Grays Harbor, Washington. POA support included investigations and remediations on St. Paul Island, tank removals and unit environmental guides. POH is performing a Botanical Survey and preparing National Register of Historical Places documents for the US Coast Guard Omega Station, HI site. SAJ provided support to include construction of pier facilities and dredging of access channels and turning basins. Maintenance dredging at Bayoro Harbor, FL was completed in FY98. NAN provided engineering services for dredging at Long Island USCG station inlets at Fire Island, Moriches and Shinnecock, NY. NAE completed the relocation of the Highland Lighthouse in Truro, MA.

DEPARTMENT OF THE TREASURY (DTR)

DTR – *General Support*

CERL assisted the DTR with the design and validation of two electro-osmotic pulse (EOP) systems at the HQ Treasury Building. EOP is a technology that prevents flooding of basements by using electric current.

DTR - *Bureau of Alcohol Tobacco and Firearms*

WES is supporting the Bureau of Alcohol Tobacco and Firearms by developing technologies to characterize environments associated with terrorist bombing events.

DTR - *Secret Service*

In FY 99 Baltimore District is providing support to the Secret Service for the construction of sewer and water lines and a classroom facility.

DEPARTMENT OF VETERANS AFFAIRS (VA)

MVP conducted site assessments of VA properties in Minneapolis, MN. POA is assisting the VA by preparing scopes for mechanical renovations at the new Anchorage Homeless Veterans facility.

B. INDEPENDENT FEDERAL AGENCIES

AMERICAN BATTLE MONUMENTS COMMISSION (ABMC)

NAB is completing repairs at the Korean War Veterans Memorial. POH provided design and construction management services for renovation of restroom facilities and the memorial pool at the National Memorial Cemetery of the Pacific in support of the ABMC.

ARCHITECT OF THE CAPITOL

In December 1998, NAB entered into an agreement with the Architect of the Capitol to provide planning, engineering and construction support. NAB executed a temporary UST closure contract in Dec 98. Other FY99 support includes UST removal and replacements and fire alarm inspection and commissioning for various buildings on Capitol Hill.

ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA – General Support

CERL evaluated the use of new technologies in the abatement of lead based paint, developed standards and specifications for plastic lumber materials and assisted in the design and construction of footbridges made from plastic lumber (using conventional wood designs) as demonstration facilities at Army and National Park Service sites. CREL is performing a feasibility study at the TVA-Muscle Shoals, AL site in FY99. NWS assisted EPA with the Puget Sound Dredge Disposal Authority Dredge Management Plan. NWW is reviewing and evaluating EPA's cost estimating. WES is evaluating three numerical models to determine water quality standards. WES studies for assessing wetlands through the Hydrogeomorphic (HGM) approach continued in FY 98 in order to further develop the HGM model, this was accomplished through EPA in Covallis, WA.

EPA – Brownfields

In FY98, USACE received \$4.5M from EPA for reimbursable support to Brownfields. USACE performed site assessments for various communities in addition to providing assistance to Showcase communities. Specific examples of the USACE use of Water Resource Development Act (WRDA) authorities. MVS received a grant from Region V EPA to investigate a Brownfields site in East St Louis. FY99 work includes site investigations. MVS has initiated environmental investigations on the former Malcolm Bliss Mental Health Facility and Hospital owned by the City of St. Louis. MVK assisted the city of Shreveport in FY98 in assessing the need and the extent of Brownfields in the area. NAB in support of the Brownfields Showcase Community, has been tasked to provide the City of Baltimore preliminary scopes and cost estimates to address 4 potential initiatives; Baltimore Harbor studies; possible areas to be converted to Wetlands; reuse of existing peer facilities in the harbor area and; the possibility of channel deepening. NWO evaluated two EPA Pilot Projects and are currently in progress with a Section 206 study with the City of Sioux Falls, SD pilot. NWS provided support to the Seattle/King County Brownfields Showcase Community Project. NWP provided support to the City of Portland on their Brownfields Showcase Community effort.

SWF's current work involves nutrient data collection and environmental assessment work associated with projects in Dallas and Austin.

EPA - San Juan Bay Estuary Study

SAJ and WES are jointly working on a hydrodynamic and water quality numerical modeling effort to address emerging San Juan Estuary issues.

EPA – Superfund

Since 1982, the USACE has supported the Superfund program by conducting remedial designs and remedial actions (construction), primarily by contract, for Superfund-financed projects. The USACE also performs reviews, prepares studies, and provides enforcement oversight, real estate, remote sensing, and geographical information systems support under this program.

EPA – Construction Grants

USACE has been providing construction oversight for EPA's Waste Water Treatment Construction Grants program. The program is slowly being phased out, but USACE still provides support in some locations as construction on funded projects continues.

EPA - Ocean Dredged Material Disposal Site(s) Management Program NWP provides ongoing monitoring of ocean dredged material disposal sites. NWP performed data collection and interpretation off the mouth of the Columbia River, developed a mathematical fate model of dredged material placement off the Umpqua River entrance and developed a draft Dredged Material Evaluation Framework, Lower Columbia River Management Area testing manual.

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

FEMA - General Support

CERL evaluated the seismic safety of federal buildings, developed and maintained the federal seismic vulnerability database. MVM performed limited map maintenance program for Lake City, AR; Patterson, AR; and Rector, AR in FY98 and will continue with this effort in FY99. TEC evaluated and assessed radar collection over the Sacramento and San Joaquin Valley in California. TEC will continue supporting FEMA/NASA sponsored IFSAR collections for FY99. These radar collections support the development of flood plain mapping and Geographic Information System (GIS) based crisis management capabilities. TEC completed a FEMA sponsored light detection and ranging (LIDAR) collection over the currently flood mapped AR Zone near Lakewood, California. This set of LIDAR evaluations will allow: a comparison of cost and accuracy for various LIDAR systems and how the use of LIDAR can support determining the lowest adjacent grades for structures potentially in flood risk areas.

FEMA - Emergency Broadcast Station (EBS) Fuel Storage Tanks

Under a 1993 MOA, thirty-one USACE districts are working on a nationwide program to bring all EBS UST and AST into environmental compliance.

FEMA - Emergency Response Support

USACE is the lead Federal agency for Emergency Support Function No. 3 – Public Works and Engineering under the Federal Response Plan managed by FEMA. In this capacity, USACE may be assigned missions providing emergency services, such as debris clearance and site access,

water supply, power, and temporary restoration of public facilities following any major disaster. For example: SWL's provided response to Hurricane Bonnie in FY98. SWF responded to flooding in Del Rio, TX. SWL, SWF and SWC are supporting Hurricane Georges cleanup for FY 99. SWG has provided emergency assistance to Hurricane Charlie damaged communities.

FEMA - *Flood Insurance Studies (FIS) and Planning Studies*

USACE conducts FIS and related technical work in support of the National Flood Insurance Program. These studies include determinations of flood risks and insurance rate zones, base flood elevations, floodway and flood profiles, and post flood environmental assessments. Projects included FIS, aerial topographic surveys, flood boundary maps, evacuation studies, post flood damage survey reports, flood threat assessments, flood frequency analyses, heavy snow removal, and flood recovery support.

GENERAL ACCOUNTING OFFICE (GAO)

NAB is providing design and construction assistance on the renovation of the 50-year old GAO Headquarters building (a 1.1 million square foot, 7 story building in Washington, DC). Technical assistance includes oversight of several construction contracts and design management.

GENERAL SERVICES ADMINISTRATION (GSA)

SWF provided environmental support services for GSA, including historical preservation and archeological consultation. SWF work efforts in support of GSA are expected to increase in FY99 due to recently signed MOA for real estate services and for NEPA studies, site assessments and historic preservation consultation.

HOLOCAUST MEMORIAL MUSEUM (HMM)

NAB provides technical assistance with operation and maintenance work for several ongoing projects.

JOHN F. KENNEDY CENTER FOR THE PERFORMING ARTS

NAB continued to provide construction management, legal services and contracting support to the Kennedy Center.

NATIONAL AERONAUTICS & SPACE ADMINISTRATION (NASA)

NASA – *General*

CREL performed on-board aircraft remote ice detection and avoidance and distribution patterns of tundra and prairie snow covers for NASA during FY98. POH is providing NASA with engineering and construction services for the rehabilitation and modification of the Infrared Telescope Facility, Mauna Kea, HI. Work to upgrade the shuttle dome is scheduled for completion in late FY99.

NASA – *Goddard Space Flight Center*

In FY98 CREL assisted Goddard Space Flight Center in the modeling and remote sensing the Arctic ice pack to determine the change in the ice thickness for various configurations, distributions, and deformation fields.

NASA – *Jet Propulsion Laboratory (JPL)*

In FY99 CREL is assisting the Jet Propulsion Laboratory with research and development of Miniature Ground Penetrating Radar.

NASA – *Plum Brook Reactor*

A USACE team lead by LRH was selected by NASA to develop the Decommissioning Plan for the Plum Brook Reactor in Ohio. The reactor is not operational and NASA would like to close the facility but must obtain Nuclear Regulatory Commission approval. The project is estimated to cost \$50-100 million and 5 years to complete. USACE offices involved are Huntington, Buffalo, Louisville, Kansas City, Lakes and Rivers Division and Headquarters.

NATIONAL SCIENCE FOUNDATION (NSF)

CREL assisted NSF in FY98 by conducting numerous investigations, research and development and general engineering support services at Antarctica.

NUCLEAR REGULATORY COMMISSION

WES is developing water surface elevation frequency-of-occurrence relationships for nuclear power plants along the East Coast of the US. NRC must re-assess probable flood levels due to hurricane-induced storm surge (including wave effects) at selected sites. Flood levels, with their probability of occurrence, will be established through numerical models using storm input from real hurricane events that occurred between 1886 to 1996. The calculations will be compared to older calculations to assure that safety margins against storm surge flooding are maintained.

TENNESSEE VALLEY AUTHORITY (TVA)

CERL provided TVA with the testing of the effectiveness of Hexcellyfe fiberwrap fiber composite system, as applied to masonry shear and bearing walls. CREL provided consultation services in FY98 for frost-damaged concrete floors inside the ice-storage rooms of the Sequoyah Nuclear power Plant in Chattanooga, TN.

UNITED STATES INFORMATION AGENCY (USIA)

TAC provided security upgrade construction inspection support worldwide. TAC also provided maintenance support worldwide for the International Broadcasting Bureau of the USIA.

B. STATE/LOCAL/TERRITORIAL/TRIBAL GOVERNMENTS

ALASKA - CREL conducted two studies for the state of Alaska during FY98 including investigating river morphology and a field study in which various pavement sections tested and evaluated to determine damage susceptibility.

AMERICAN SAMOA GOVERNMENT - POH is providing assistance to the American Samoa Government including design, construction, training, investigations and studies on several projects.

ARKANSAS ELECTRIC COOPERATIVE CORPORATION - SWL reviewed plans and specifications for hydropower plants at numerous sites along the McClellan-Kerr Arkansas River Navigation System. SWL ensured the finished hydropower plants met Section 10 and Section 404 guidelines and ensured the projects did not have an adverse impact on the government locks and dams.

CLEVELAND, OH - The LRB is providing support in the design and construction of six sewerline extensions through a combined disposal facility.

CLINTON COUNTY, NY - NAN is providing technical assistance to evaluate debris collection, jamming and ice jam potential for a stream.

COMMONWEALTH OF NORTHERN MARIANA ISLANDS - WES is developing a wetland assessment technique for the CNMI Department of Environmental Quality to reduce wetland evaluation costs and to improve the scientific validity and accuracy of those evaluations. This will enable the Commonwealth to obtain a characterization of their wetland resources and satisfy the requirements of the Clean Water Act.

COMPTON, CA - SPD has constructed a fence along a flood control panel.

DISTRICT OF COLUMBIA PUBLIC SCHOOLS - NAB providing master planning, design, procurement, major facility component replacement, whole school modernization and new school construction.

FLORIDA - WES is conducting hydrogeomorphology studies of the Kissimmee River.

GARWOOD, NJ - NAN will manage structural analysis of 2 aging school buildings for the Department of Education. d survey and mapping, a Hazard Mitigation Study for Coastal Flooding, Bioassay And Bioaccumulation Testing of Dredge Materials from commercial ports, underwater structural inspection of bridges and foundation design review and analysis.

INDIAN NATIONS - SWT supported Indian governments with technical assistance and design services including: Quapaw, Seneca Cayuga, Otoe Missouri, Tonkawa, Navajo and Osage.

KANSAS CITY, MO. - In FY98, NWK performed engineering and design during construction on the Troost Avenue to Woodland Avenue reach of Brush Creek.

KAUAI, HI - POH is removing 25 UST at various County of Kauai facilities.

LONG BEACH, CA - WES provided engineering support in FY98 on Pier J Breakwater and the Navy Basin for the City of Long Beach. These included scale model studies of the proposed breakwater addition to the Pier experiments to optimize armor stone size to minimize impacts of long-period surge.

LOS ANGELES, CA - SPL is performing construction management to install runway lighting at two sites in Southern California for the Los Angeles Department of Airports.

MASSACHUSETTS - NAE will begin construction of safety modifications at Old Quincy Reservoir in Braintree, MA. NAE completed design and initiated dredging of local berthing areas in Boston Harbor for the Massachusetts Port Authority. Dredging will continue in FY99.

MEMPHIS, TN - MVM performed conceptual planning and environmental study for the city of Memphis riverfront development project.

MINNESOTA - MVP conducted a Mississippi River survey for the Minnesota Department of Natural Resources in FY98. CREL conducted a demonstration project in the Minnesota Frost Effects Research Facility to show the reduction in damage to low volume roads by using reduced tire pressures.

MONTANA - CREL conducted research on pavement design, construction, and maintenance to study the influence of spring thaw on pavement structures for the state Department of Transportation.

MONTANA STATE UNIVERSITY - CREL assessed the reinforcement capabilities of geosynthetics in base courses of roadways.

NEVADA - CREL studied the performance of base courses in highway pavement systems.

NEW HAMPSHIRE - During FY98 CREL researched the performance of highway pavements and sub-grade soils under winter conditions.

NEW JERSEY INSTITUTE OF TECHNOLOGY - CERL collaborated with the New Jersey Institute of Technology in the development, design, fabrication and demonstration of a portable and on-line passive acoustic leak detection system.

NEW MEXICO - SPA provided assistance in the rehabilitation of Ute Dam located near Tucumcari, NM. Work involved rehabilitation and replacement of a majority of the dam's outlet works (including pipes and valves) and initial repair of the emergency spillway.

NEW ORLEANS PORT AUTHORITY - MVN assisted the New Orleans Port Authority by providing cultural resources compliance services associated with the Florida Avenue Bridge, LA.

NORTH DAKOTA STATE UNIVERSITY - CREL participated in a cooperative investigation with the North Dakota State University on the mechanical behavior and durability of composite materials at low temperatures.

OREGON - In FY98 NWP prepared a cost estimate for the State of Oregon Department of Transportation on two shoreline protection structures.

OREGON STATE UNIVERSITY (OSU) - CREL is collaborating with OSU to conduct research and testing on the behavior of barium in Arctic Sea ice.

PUERTO RICO (PR) - SAJ provides construction oversight services to the Environmental Quality Board (PREQB) for construction grants in the Commonwealth of Puerto Rico. The PREQB now funds this program, formerly under the EPA Construction Grants Program. SAJ is also preparing a design memorandum for the dredging and environmental restoration of 1.8 miles of the Martin Pena Canal.

RHODE ISLAND - MVS initiated an archaeological research collections center evaluation for the Rhode Island Department Of Transportation. The evaluation included archaeological curation assessment, an architectural evaluation and recommendations on the suitability of the basement of the Woonsocket Train Depot as an archaeological research collection center.

RICHMOND, ME - CREL conducted a study of scrap rubber as a road construction material.

ROOSEVELT ISLAND, NY - In FY98, NAN provided engineering support for the design of a protective structure around the southern end of island. NAN also evaluated the condition of the existing sea wall at the northern end of the island.

SAN MIGUEL COUNTY, CO - CREL studied and defined the conditions leading to rapid river-ice formation and flow blockage on the San Miguel River.

SEATTLE - NWS and the City of Seattle, WA have negotiated a agreement for NWS to provide a feasibility study, design, and construction oversight services for a sediment remediation project along the Central Seattle Waterfront.

SOUTH CAROLINA PORTS AUTHORITY - WES is conducting navigation studies to identify channel improvements in the area of Drum Island.

UNIVERSITY OF ALASKA - CREL conducted snow pack energy flux research for the University of Alaska at Fairbanks. CREL is evaluating the feasibility of helical pier foundations in frozen ground and develop design and installation guidelines for University of Alaska at Anchorage.

UNIVERSITY OF CALIFORNIA, SANTA BARBARA - CREL conducted research on image processing and applications in modeling of snow processes and classification.

UNIVERSITY OF MARYLAND - CREL evaluated SUPERPAVE software.

UNIVERSITY OF NEW HAMPSHIRE - CREL is modeling the performance of pavements (initiated in FY98 and continuing in FY99) made with industrial wastes, specifically to study the leaching of harmful materials from concrete made with fly ash.

UNIVERSITY OF NEW MEXICO (UNM) - CREL conducted research during FY98 on the use of geosynthetics and soils in the development of capillary barrier products.

UNIVERSITY OF NEW ORLEANS - In FY98, CREL performed a comprehensive investigation of the impact behavior of specific materials at low and other specific temperature.

UNIVERSITY OF WASHINGTON - CREL developed and performed investigations in Vitus Lake during FY98 to study the Bering Glacier and evaluate the dynamics associated with the recent glacier surge.

VERMONT (VT) - In FY98, CREL evaluated materials for bridge decks for waterproofing effectiveness and evaluated characteristics of base and sub-base materials used in pavement construction for the state of Vermont.

VILLAGE OF CHAMPLAIN, NEW YORK - CREL conducted research in FY98 on an ice control structure for Great Chazy River, Champlain, NY.

WISCONSIN - During FY99 CREL is assisting and collaborating with the State to investigate the effects of reducing damage on asphalt-surfaced low volume roads.

C. PRIVATE FIRMS/ORGANIZATIONS

USACE LABORATORIES ASSISTANCE

USACE labs conducted numerous research efforts in support of or in collaboration with private firms. Following are the USACE labs and the firms or organizations that they assisted. See Appendix B for a brief description of the work involved for each effort.

CERL –Drytronic, Inc, IBM Corporation, Innovative Logistics Techniques, Inc., Project Software and Development, Inc., S&C Electric Company

CREL – Alaska Science and Technology Foundation, American Geophysical Union, Antarctic Support Associates, ARCO Chemical Co., Arctic Research Consortium of the United States, Exxon Production Research Company, Fluor-Daniel GTI, Forest Engineering Research Institute of Canada-Western Division, Fridtjof Nansen Institute, Institute of Ecosystem Studies, St. Catharines Hydro-Electric Commission, Shimizu Corp., Tenax, Inc., University of Waterloo – Biotelemetry Institute

WES - Louisiana Hydroelectric, John Chance and Associates, United Engineers International.

OTHER - SAM is providing technical assistance to **Taylor Engineering** to conduct studies for the Dos Bocas Breakwater in Tabasco, Mexico. SAM is brokering wave information studies for this effort to WES. In FY98, wave hindcast and breakwater experiments, were initiated.

D. FOREIGN NATIONS AND INTERNATIONAL ORGANIZATIONS

ARGENTINA

WES is providing technical assistance to the Argentina State Department on the development of a fish passage research and development program.

CENTRAL EUROPE

NAU conducted a site visit of a petroleum storage facility in Central Europe. Recommendations for improvements in efficiency and environmental safeguards to the storage facility were provided.

POLAND

TAC provided a concept design for repair and improvement of an existing forced oxidation flue gas desulfurization system at the Elektrownia Skawina Power Plant in Skawina Poland for the DOS (primary customer), with collaboration from USAID and DOE. Following reassignment of NAU to NAD, responsibility on this project has been transferred to NAU. NAU provided technical assistance to USAID for repair/conversion of the Skawina desulfurization system.

POLAND, HUNGARY, AND THE CZECH REPUBLIC

In preparation for Poland, Hungary, and the Czech Republic being integrated into NATO, NAU provided assistance to those countries' in the evaluation of their infrastructure to determine if they meet NATO interoperability requirements.

IV. TABLE A - FY98 IIS PROGRAM - WORKLOAD SUMMARY

AGENCY - SUBAGENCY OR PROGRAM	TOTAL		TOTAL (\$000)
	ENVIRONMENTAL (\$000)	INFRASTRUCTURE (\$000)	
Department of Agriculture (DOA)	1,088	761	1,849
Department of Commerce (DOC)			2,121
Economic Development Administration (EDA)	1,346	0	
Other	314	461	
Department of Energy (DOE)			28,072
Environmental Assistance	8,878	0	
Federal Energy Technology Center (FETC)	6,754	0	
General Support	2,165	5,464	
Project Environmental Mgt (EM)/Ten Year Plan(TYP)	3,459	0	
Other	1,164	188	
Dept. of Health & Human Services (HHS)	1,605	60	1,665
Dept. of Housing & Urban Development (HUD)	307	2,005	2,312
Department of Interior (DOI)			38,179
Bureau of Land Management (BLM)	968	34	
National Park Service (NPS)	3,418	15,408	
Office of Insular Affairs (OIA)	6	7,972	
US Fish and Wildlife Service (USF&WS)	7,526	942	
Other	127	1,778	
Department of Justice (DOJ)			94,093
Bureau of Prisons (BOP)	1,746	15,958	
Drug Enforcement Agency (DEA)	0	6,723	
Immigration & Naturalization Service (INS)	20,323	49,213	
Other	49	81	
Department of State (DOS)	0	1,128	1,128
Department of Transportation (DOT)			35,634
Federal Aviation Administration (FAA)	28,503	2,964	
U.S. Coast Guard (USCG)	2,613	795	
Other	0	759	
Department Of Treasury (DTR)			2,289
Federal Law Enforcement Center (FLEC)	1,000	500	
Other	121	668	
Environmental Protection Agency (EPA)			334,989
Construction Grants	50	4,304	
Superfund	316,702	0	
Other (Constr., Techn., & RE)	5,374	8,559	
Federal Emergency Mgmt Agency (FEMA)			90,803
Emergency Broadcast Stations	774	494	
Flood Insurance and Planning Studies	0	1,532	
Rapid Response/Emergency Operations	0	84,894	
Other	1,646	1,463	
General Accounting Office (GAO)	0	3,000	3,000
General Services Administration (GSA)	1,068	103	1,171
Holocaust Memorial Council	0	1,900	1,900
National Science Foundation (NSF)	0	1,031	1,031
Panama Canal Commission (PCC)	725	3,500	4,225
Smithsonian Institution			1,100
Kennedy Center	0	1,100	
Other	0	0	
Other Federal Agencies	11,345	5,492	16,837
Non-Federal			33,104
State/Local/Territorial/Tribal Governments	2,327	23,459	
Private	3	1,591	
International	0	5,724	
TOTALS	433,494	262,008	695,502

Note: Agencies/Subagencies with total programs of less than \$1M are listed under "Other Federal Agencies"

V. TABLE B - FY99 IIS PROGRAM - PROJECTED WORKLOAD SUMMARY

AGENCY - SUBAGENCY OR PROGRAM	TOTAL		TOTAL (\$000)
	ENVIRONMENTAL (\$000)	INFRASTRUCTURE (\$000)	
Department of Agriculture (DOA)			4,286
US Forest Service (USFS)	55	2,161	
Other	1,698	372	
Department of Commerce (DOC)			3,545
National Oceanic & Atmospheric Admin (NOAA)	1,535	170	
Other	1,525	315	
Department of Energy (DOE)			21,099
Environmental Assistance	11,610	0	
Federal Energy Technology Center (FETC)	4,030	0	
Other	2,320	3,139	
Dept. of Health & Human Services (HHS)	1,097	100	1,197
Dept. of Housing & Urban Development (HUD)	200	2,214	2,414
Department of Interior (DOI)			47,890
Bureau of Land Management (BLM)	1,964	175	
National Park Service (NPS)	3,158	5,743	
Office of Insular Affairs (OIA)	0	32,509	
US Fish and Wildlife Service (USF&WS)	1,091	165	
Other	1,754	1,331	
Department of Justice (DOJ)			98,056
Bureau of Prisons (BOP)	1,561	19,213	
Federal Bureau of Investigation (FBI)	24,000	0	
Immigration & Naturalization Service (INS)	8,389	44,720	
Other	50	123	
Department of Transportation (DOT)			26,008
Federal Aviation Administration (FAA)	13,875	2,010	
Federal Highway Administration (FHA)	0	1,400	
U.S. Coast Guard (USCG)	2,971	3,672	
Other	1,780	300	
Department Of Treasury (DTR)	2,040	250	2,290
American Battle Monuments Commission (ABMC)	0	1,800	1,800
Environmental Protection Agency (EPA)			284,497
Brownfields	3,038	0	
Construction Grants	0	1,200	
Ocean Dredge Disposal Sites Monitoring	9,259	63	
Superfund	262,652	0	
Other (Constr., Techn., & RE)	7,174	1,111	
Federal Emergency Mgmt Agency (FEMA)			136,116
Flood Insurance and Planning Studies	259	1,405	
Rapid Response/Emergency Operations	85	122,326	
Other	8,995	3,046	
General Accounting Office (GAO)	0	4,200	4,200
General Services Administration (GSA)	4,526	940	5,466
Holocaust Memorial Council	0	2,200	2,200
Tennessee Valley Authority (TVA)	0	1,300	1,300
Other Federal Agencies	20,190	3,331	23,521
Non-Federal			106,498
State/Local/Territorial/Tribal Governments	5,054	95,283	
Private	0	829	
International	162	5,170	
TOTALS	408,097	364,286	772,383

Note: Agencies/Subagencies with total programs of less than \$1M are listed under "Other Federal Agencies"

APPENDIX A
USACE LABORATORIES ASSISTANCE TO
PRIVATE FIRMS AND ORGANIZATIONS

CERL

DRYTRONIC, INC. - Drytronic, Inc. of Janesville, Wisconsin performed research and development with CERL to validate the performance of two Electro Osmotic Pulse (EOP) systems in terms of efficiency, and detrimental effects on the surrounding concrete, and cost of installation and operation.

IBM Corporation - The IBM Corporation of Poughkeepsie, NY cooperated with CERL to simulate earthquake ground motions for IBM computer equipment. IBM wanted to determine the performance of computer equipment mounted on a raised computer platform when subjected to the simulated earthquake ground motions.

Innovative Logistics Techniques, Inc. - Innovative Logistics Techniques, Inc (INNOLOG) cooperated with CERL to provide technical support via the phone, email or in person as required for MAXIMO software problems. This ongoing support allows INNOLOG's customers the latest technologies available and successful implementation of the products.

Project Software and Development, Inc. - Project Software and Development, Inc. cooperated with CERL to provide support and report writing and upgrade the assistance to the NAVY FISC.

S&C Electric Company - The S&C Electric Company, Chicago, Illinois collaborated with CERL to simulate earthquake ground motions for S&C Electric. S&C Electric has to meet the seismic qualification requirements of the IEEE 693, Draft 6.1, 1997 Qualification Standard for four large high voltage Circuit-Switcher assemblies.

CREL

Alaska Science and Technology Foundation - Conduct research and testing on the monitoring of a new airfield in Deadhorse, AK and conduct laboratory tests to determine optimum geosynthetic properties for use to reduce frost heave in soils.

American Geophysical Union - Conduct research in hydrological sciences

Antarctic Support Associates - Conduct field-testing and evaluation of the temperature and depth probe for commercialization purposes.

ARCO Chemical Co. - Conduct research and testing on the low temperature performance of propylene carbonate and propylene glycol concrete admixtures.

Arctic Research Consortium of the United States - Conduct research and studies on arctic science and technology transfer through education

Exxon Production Research Company - Conduct research and testing on ice forces on conical structures.

APPENDIX A
USACE LABORATORIES ASSISTANCE TO
PRIVATE FIRMS AND ORGANIZATIONS

CREL (cont.)

Fluor-Daniel GTI - Conduct research and testing on the comparison of field analysis methods for characterizing petroleum contamination in soils.

Forest Engineering Research Institute of Canada-Western Division - Conduct research and testing on the validation of a computer model, which predicts cumulative damage for bituminous surfaced low-volume roads by using trucks with, reduced tire pressure during spring thaw.

Fridtjof Nansen Institute - Conduct research and testing on the effectiveness of preventing frost formation on vascular plants.

Institute of Ecosystem Studies - Conduct research and testing on the effects of reduction in snowcover on soils in northern forests.

Shimizu Corp. - Analyze data from Non-Simultaneous Ice Crushing-Medium-Scale Indentation tests done in Japan.

St. Catharines HydroElectric Commission - Perform research and testing on maintaining operation of bypass tainter gates during frazil ice conditions at the Heywood Generating Station.

Tenax – Evaluate use of use of geosynthetics in pavements

University of Waterloo – Biotelemetry Institute - Study the effects of supercooling and the associated formation and growth of frazil and anchor ice on the activity, cardiac output and survival of freshwater fish

WES

Louisiana Hydroelectric - Through a Cooperative Research and Development Agreement (CRDA) signed in December 1997, WES entered into an effort with a private sector firm, Catalyst Old River Hydroelectric Limited, to assess the impacts of the hydroelectric power station on the and sediment diversion on the lower Mississippi and Atchafalaya River Systems. This area, known as the Old River Control Complex, is operated and maintained to control the water flow and sediment delivery within the two river systems. The research involves geomorphic assessments, prediction of long-term aggradation and degradation trends due to the operation of the Complex, and a three dimensional model of sediment diversion ratios.

John Chance and Associates - In December 1997, WES entered into a CRDA with John E. Chance and Associates, Inc. to jointly conduct research in airborne LIDAR technology. WES has the mission to plan and execute research in this technical field and is a partner with the Mobile District in the USACE Airborne LIDAR Bathymetry Technical Center of Expertise (ALBTCX). The ALBTCX pursues projects of mutual interest, one of which is a major upgrade of the Corps Scanning Hydrographic Operational Airborne LIDAR Survey (SHOALS). The upgrade is to be

APPENDIX A
USACE LABORATORIES ASSISTANCE TO
PRIVATE FIRMS AND ORGANIZATIONS

WES

John Chance and Associates (cont.)

accomplished through the CRDA with John Chance and Associates and will significantly improve the effectiveness of SHOALS for large-area survey and charting projects for customers such as the Navy, the National Ocean Service, and their counterparts in other countries.

United Engineers International - In late FY98, WES signed a Technical Assistance Agreement with United Engineers International, Inc. (UEI). UEI has a contract to design and construct the San Roque Multipurpose Dam Project in the Philippines. UEI is requesting technical assistance in the review of existing documents on the project and in evaluating the technical approach, procedures, and recommendations for the design and construction.

APPENDIX B - ACRONYMS

ABMC	American Battle Monuments Commission
AECC	Arkansas Electric Cooperative Corporation
AERC	INS-Architect-Engineering Resource Center
AERF	Aquatic Ecosystem Research Foundation
ALBTCX	Airborne LIDAR Bathymetry Technical Center of Expertise
ARS	Agricultural Research Services
AST	Aboveground Storage Tank
BEP	Bureau of Engraving and Printing
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BOP	Bureau of Prisons
BOR	Bureau of Reclamation
BPA	Bonneville Power Administration
CASHE	Compliance Assessment - Safety, Health and The Environment Program
CCC	Commodity Credit Corporation
CCD	Camouflage, Concealment and Deception
CDC	Center for Disease Control
CERL	Construction Engineering Research Laboratory
CFSA	Consolidated Farm Service Agency
CNMI	Commonwealth of Northern Mariana Islands
Corps	U. S. Army Corps of Engineers
CRDA	Cooperative Research and Development Agreement
CREL	Cold Regions Research and Engineering Laboratory
D&D	Decontamination and Decommissioning
DEA	Drug Enforcement Administration
DOA	Department of Agriculture
DOC	Department of Commerce
DOD	Department of Defense
DOE	Department of Energy
DOI	Department of Interior
DOJ	Department of Justice
DOS	Department of State
DOT	Department of Transportation
DTR	Department of Treasury
EBS	Emergency Broadcast System
EDA	Economic Development Administration
EOP	Electro-Osmotic Pulse
EPA	Environmental Protection Agency
EIS	Environmental Impact Statement
EM	Environmental Management
ENP	Everglades National Park
ER	Environmental Restoration
ESA	Environmental Site Assessment
FAA	Federal Aviation Administration
FBI	Federal Bureau of Investigation
FDA	Food and Drug Administration
FGDC	Federal Geographic Data Committee
FEMA	Federal Emergency Management Agency
FETC	Federal Energy Technology Center
FHwA	Federal Highway Administration
FRA	Federal Railroad Administration
FIS	Flood Insurance Study
FLETC	Federal Law Enforcement Training Center
FSA	Farm Services Agency
FTE	Full Time Equivalent
FUSRAP	Formerly Used Sites Remedial Action Program
FY	Fiscal Year

APPENDIX B - ACRONYMS

GAO	General Accounting Office
GIS	Geographic Information System
GSA	General Services Administration
HHS	Department of Health and Human Services
HGM	Hydrogeomorphic
HNC	Huntsville Engineering Center
HTRW	Hazardous Toxic and/or Radioactive Waste
HUD	Department of Housing and Urban Development
IA	Interagency Agreement
IBB	International Broadcasting Bureau
IBWC	International Boundary Water Commission
IHS	Indian Health Services
IJC	International Joint Commission
INEEL	Idaho National Engineering and Environmental Laboratory
INNOLOG	Innovative Logistics Techniques, Inc
INS	Immigration and Naturalization Service
IRS	Internal Revenue Service
IRTF	Infrared Telescope Facility
LIDAR	Light Detection and Ranging
LRB	Buffalo District
LRC	Chicago District
LRD	Great Lakes and Ohio River Division
LRE	Detroit District
LRH	Huntington District
LRL	Louisville District
LRN	Nashville District
LRP	Pittsburgh District
MARAD	Maritime Administration
MDC	Marine Design Center
MOA	Memorandum of Agreement
MQF	Melalueca Quarantine Facility
MVD	Mississippi Valley Division
MVM	Memphis District
MVN	New Orleans District
MVP	St. Paul District
MVR	Rock Island District
MVS	St. Louis District
NAB	Baltimore District
NAD	North Atlantic Division
NAE	New England District
NAN	New York District
NAP	Philadelphia District
NATO	North Atlantic Treaty Organization
NAU	Europe District
NEPA	National Environmental Policy Act
NASA	National Aeronautics and Space Administration
NIOSH	National Institute for Occupational Safety and Health
NOAA	National Oceanic and Atmospheric Administration
NORM	Naturally-Occurring Radioactive Materials
NPS	National Park Service
NRC	Nuclear Regulatory Commission
NRCS	Natural Resources Conservation Service
NSF	National Science Foundation
NWD	Northwestern Division
NWK	Kansas City District
NWO	Omaha District
NWP	Portland District

APPENDIX B - ACRONYMS

NWS	Seattle District
NWW	Walla Walla District
O&M	Operation and Maintenance
OIA	Office of Insular Affairs
OIIS	Office of Interagency and Intergovernmental Support
OMB	Office of Management and Budget
OSU	Oregon State University
PAL	Pre-inspection Automobile Lane
PCC	Panama Canal Commission
PEIS	Programmatic Environmental Impact Statements
POA	Alaska District
POD	Pacific Ocean Division
POH	Hawaii District
PREQB	Puerto Rico Environmental Quality Board
Project EM	Project Environmental Management - DOE
PM	Program Management
QA	Quality Assurance
QC	Quality Control
RCI	Rapid Commercialization Initiative
RD/RA	Remedial Design/Remedial Action
RUS	Rural Utility Services
SAC	Charleston District
SAJ	Jacksonville District
SAM	Mobile District
SAS	Savannah District
SBA	Small Business Administration
SHOALS	Scanning Hydrographic Operational Airborne LIDAR Survey
SPA	Albuquerque District
SPK	Sacramento District
SPL	Los Angeles District
SRS	Savannah River Site
SSC	Superconducting super collider
SFWMD	South Florida Water Management District
SWF	Fort Worth District
SWG	Galveston District
SWL	Little Rock District
SWT	Tulsa District
TAC	Transatlantic Programs Center
TEC	Topographic Engineering Center
TVA	Tennessee Valley Authority
TYP	Ten Year Plan
UEI	United Engineers International, Inc.
UMTRA	Uranium Mill Tailings Remedial Action
USACE	US Army Corps of Engineers
USAID	United States Agency for International Development
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
USFS	United States Forest Service
USGS	United States Geological Survey
USIA	United States Information Agency
UST	Underground Storage Tank
VA	Veterans Affairs
VHA	Veterans Health Administration
WES	Waterways Experiment Station
WWTP	Wastewater Treatment Plant